1012-26 **Degenerative Aortic Stenosis: An Arteriosclerotic Disease**

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Background Close relationship between degenerative aortic stenosis (dAS) and arteriosclerosis has been established recently, identifying dAS as an inflammatory disease. Indeed, local pathological changes at the stenotic aortic valve resemble closely arteriosclerotic plaque. However, in almost half of the patients with dAS no sign of systemic arteriosclerosis is evident.
Methods 16 patients with severe isolated dAS (mean transvalvular pressure gradient 58 mmHg), angiographically normal coronaries and without clinical signs of peripheral artery disease were included. Flow mediated vasodilatation (FMD) was performed using high-resolution ultrasound. Results are expressed as percentage change from baseline. Nitroglycerin (NG) sublingually served as marker for endothelium independent vasodilatation. Ultrasound and clinical assessment were repeated 3 months after aortic valve replacement. Control subjects (n=10) were matched for age, blood pressure, cholesterol and plasma glucose.
Results Patients with dAS had significantly impaired FMD compared to the control group, yet there was no difference found before and after aortic valve replacement (1.7% ±0.9 versus 3.4% ±0.6, p<0,0001 and 1.7% ±0.9 versus 2.0% ±1.0, p=0.3 respectively). Interestingly, NG induced vasodilatation was significantly decreased in dAS compared to the control group and was improved after valve replacement without reaching statistical significance (6.4% versus 10.1%, p=0.04 and 6.4% versus 8.2%, p=0.2). Clinical parameters like blood pressure, lipids and plasma glucose remained unchanged throughout the study course.
Conclusions Degenerative aortic stenosis in absence of manifest systemic arteriosclerosis is associated with systemic endothelial dysfunction and reduced sensitivity to NG. These findings open the field for pharmacological restoration of endothelial function to slow progression of dAS. Aortic valve replacement by surgery does not seem to stop the systemic component of the disease.

POSTER SESSION

1037 Advances in Cardiac Surgery/Arrhythmia Surgery

Sunday, March 30, 2003, Noon-2:00 p.m.
McCormick Place, Hall A
Presentation Hour: Noon-1:00 p.m.

1037-21 **Prospective Multicenter Clinical Trial of Surgical Pulmonary Vein Isolation for the Treatment of Atrial Fibrillation**

Ralph J. Damiano, Jr., Patrick M. McCarthy, A. M. Gillinov, William H. Ryan, Marc R. Moon, Michael J. Mack, Sydney L. Gaynor, Sunil Prasad, Samuel A. Wickline, Marci S. Bailey, Kara M. Barnett, Nicholas R. Damiano, Yosuke Ishii, Richard B. Schuessler, Washington University School of Medicine, Saint Louis, MO

Background: The Cox-Maze (CM) procedure remains the gold standard for the surgical treatment of atrial fibrillation (AF). However, the original "cut and sew technique" is time consuming and technically challenging. We have modified the CM III procedure by using a bipolar radiofrequency (RF) ablative device to isolate the pulmonary veins (PV). The other lesions of the CM procedure were performed either with RF or incisions. The purpose of this multicenter trial was to demonstrate the efficacy and safety of bipolar RF in isolating the PV and replacing the surgical incisions of the Cox-Maze procedure.
Methods: Beginning January 2002, 26 consecutive patients (9 female, 17 male) underwent PV isolation utilizing RF at three medical centers. Mean age was 60.1 ± 12.2 years. Seventeen patients had paroxysmal AF while 9 had chronic AF with a a mean AF duration of 7.6 + 6.9 years. Electrical isolation of the PV was documented with intraoperative pacing in all patients. Atrial function and PV patency were assessed by post-operative MRI or 3D computed tomography at 1 month.
Results: The left (LPV) and right (RPV) pulmonary veins were isolated in every instance. The LPV underwent 3.0 ± 1.4 RF applications while the RPV underwent 2.8 ± 1.0 RF applications. Ablation times were 26.4 ± 10.4 seconds for the LPV and 27.4± 13.1 seconds for the RPV. There were no operative mortalities. Follow-up MRI showed preserved atrial contractility and no evidence of significant PV stenosis. At last follow-up, 24 of 26 patients (92%) were in sinus rhythm and two patients were in atrial fibrillation.
Conclusions: Bipolar RF ablation can be used effectively and safely to isolate the PV, replacing the "cut and sew" technique. This technology has the potential to simplify the surgical treatment of AF.

1037-22 **Rapid Load Oral Amiodarone Reduces Incidence of Postoperative Atrial Fibrillation and Atrial Flutter**

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Background: Atrial Fibrillation and Atrial Flutter (AFAF) are a common occurence after heart operations that use cardiopulmonary bypass. Some studies have demonstrated that amiodarone reduce incidence of AFAF after open heart surgery. This study was designed to evaluate the effect of amiodarona on the prevention AFAF after bypass surgery, when administred for just two days before surgery.
Methods: We did a randomised, double-blind placebo controlled trial in wich patients undergoing coronary artery bypass grafting (CABG) received amiodarone (n=46, average age 61,0 years)or placebo (n=47, age 61,6 years). Patients were enrolled less than sixty hours before surgery and receveid 600mg PO three times daily. The mean preoperative total dose of amiodarone was 2,8g.
Results: Preoperative patient characteristics and procedure types were similar in both groups. Postoperative AFAF ocurred in 15,6% in the amiodarone group and 40,6% in the placebo group (P=0,016). Incidence of complications other than AFAF were similar. Lenght of hospital stay for the placebo group was 11,4 days, and 8,8 days for the amiodarone group (P=0,08). No diference were noted in morality.
Conclusions: Rapid load oral amiodarona was safe and effective in reducing the incidence of atrial fibrillation after CABG, but did not significantly alter lenght of hospital stay

1037-23 **Long-Term Results of the Surgical Treatment of Atrial Fibrillation: Predictors of Late Recurrence**

Sydney L. Gaynor, Sunil Prasad, Richard B. Schuessler, Marci S. Bailey, John P. Boineau, Yosuke Ishii, Ralph J. Damiano, Jr., Washington University School of Medicine, St. Louis, MO

Background: The Cox-Maze I (CM) procedure was introduced 15 years ago for the treatment of atrial fibrillation (AF). Since then, 3 versions of this procedure have been performed, yet there has been no report comparing the long-term results of these different modifications. This study evaluates the results and predictors of AF recurrence in 259 consecutive patients who underwent a CM procedure at our institution. **Methods** From 1987 to 2002, 259 patients (71 female and 188 male) underwent the CM procedure, with a mean age of 54±11 years. Thirty-two patients had CM I, 16 patients had CM II and 211 patients had the CM III procedure. Data were analyzed by Cox-Regression analysis with pre- and post-operative variables used as covariates. Patient follow-up was conducted by questionnaire, physician examination, and electrocardiographic documentation. **Results**: The mean duration of preoperative AF was significantly longer in the CM I group as compared to CM II and III (p=0.04). There was no difference in postoperative mortality between the groups. New pacemaker implantation was significantly higher in the CM I group. Patient follow-up was achieved in 90% of cases with a mean follow-up time of 5.9±3.5 years. The significant independent predictors of AF recurrence were duration of preoperative AF (p<0.001) and version of Maze (p=0.02). **Conclusion:** The CM procedure remains the gold standard for the treatment of AF, and has evolved over time into a procedure with high long-term efficacy and a low incidence of complications.

Summary:

	Number of patients	Duration of AF (yrs)	New Pacemaker (%)	Operative Mortality (%)	Freedom from AF (% at 10 yrs)	Actuarial 10 yr survival (%)
Maze I	32	10.8±9.8	53	0	69	92
Maze II	16	5.9±5.2	25	6.2	85	93
Maze III	211	7.7±7.5	15	1.4	94	94
p-value (CM I vs CM III)		0.04	<0.001	0.24	0.02	0.5

1037-24 **Does the Cox-Maze Procedure Impact Quality of Life in the Late Postoperative Period?**

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Background: A common indication for surgical treatment of chronic atrial fibrillation is the negative impact of the disease on the patient's quality of life (QOL). However, the influence of the Cox-Maze procedure on QOL in the late postoperative period remains unclear. Methods: Over a 10 year period, 199 patients underwent the Cox-Maze procedure for persistent (120, 60%) or permanent (79, 40%) atrial fibrillation. Indications for surgery included arrhythmia or drug intolerance (76%) or thromboembolic events (24%). The mean (± SD) age was 52 ± 11 years and there were 155 (78%) men. A lone Cox-Maze procedure was performed in 132 (66%), while 67 (34%) underwent a concomitant procedure (CABG, valve, or ASD closure). Complete QOL assessment was performed in 102 patients using two standard survey tools: the Medical Outcomes SF-36 (100 point scale) and the Ferrans and Powers QOL Index (30 point scale). Results: Mean follow-up was 64 ± 25 months postoperatively. The average score across all 8 domains of the SF-36 was 73 ± 28 for Maze patients, which was not significantly different than the age-adjusted US norm (72 ± 27) for the general population (p>0.79). Comparing lone Maze versus concomitant Maze patients, there was no difference in SF-36 (p>0.67) or QOL Index (p>0.99). In addition, age did not impact either SF-36 (p>0.74) or QOL Index (p>0.21). However, males had significantly higher QOL scores than females (SF-36: 76 ± 24 vs. 64 ± 29, p<0.002; QOL Index: 24 ± 4 vs. 22 ± 4, p<0.02). Conclusion: Compared to the general population, patients who have undergone the Cox-Maze procedure have a similar level of satisfaction with their QOL. In addition, while age had no impact, males had a significantly higher QOL than females. The Cox-Maze procedure returns patients to a normal QOL and should be considered for those who are intolerant of their arrhythmia.